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CLAVIS NOMINUM

Ein Vorschlag

von

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Wie man aus der Mitteilung in Taxon **1** (3): 41 entnehmen kann, wird im Laufe des Jahres 1952 der zweite Teil des „Index Herbariorum" zu erscheinen beginnen, der „Index Collectorum". Allein schon die Zahl von ungefähr 20.000 Namen läszt den gewaltigen Umfang dieses Verzeichnisses ahnen. Es wird für viele systematisch-botanische, taxonomische, chorologische Arbeiten, vor allem für Monographien eine unentbehrliche Hilfe sein, deren Wert noch steigen wird, sobald ein oft kaum überwindliches Anwendungshindernis beseitigt ist: Herbarzettel mit schwer, kaum oder nicht leserlichen Sammler- (und Autoren-) Namen.

Selbstverständlich ist hier nicht von jenen modernen und auch vielen älteren Sammlungen die Rede, deren Schedae vorgedruckte, klare Angaben aufweisen. Aber gerade viele alte Belege, die wegen ihres Wertes für die Typifizierung oder für Punktkarten keinesfalls unberücksichtigt bleiben dürfen, zwingen jeden Botaniker, der mit wissenschaftlichen Pflanzensammlungen zu arbeiten hat, oft dazu, unter viel Zeitaufwand förmliche Rätsel zu lösen. Diese beziehen sich zumeist auf den Namen des Sammlers; denn dieser ist oft der Schlüssel für die übrigen Angaben des Herbarzettels. Zur Beleuchtung der Lage sei hier kurz auf einige, jedem Fachmann geläufige Tatsachen verwiesen:

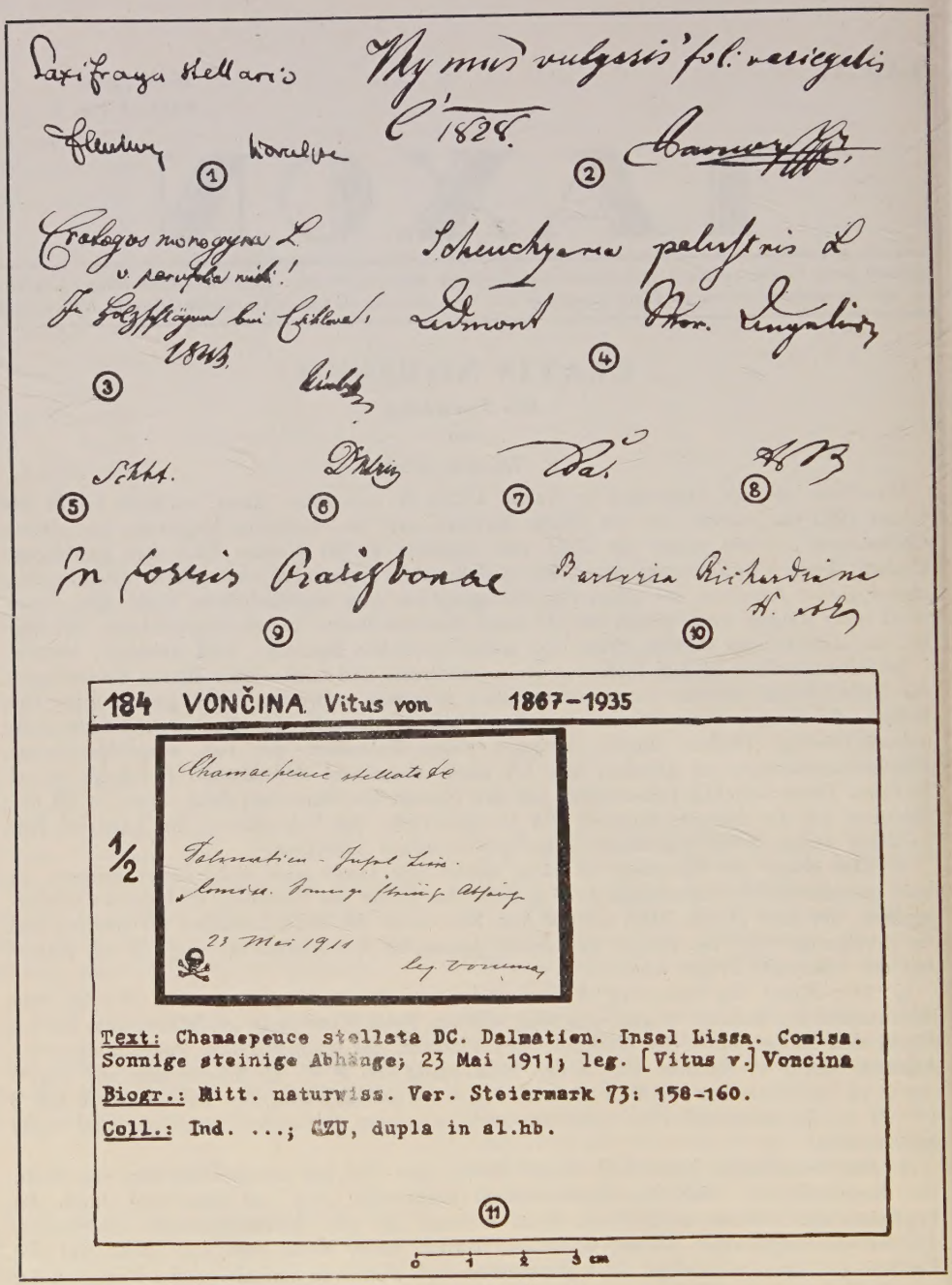
a) Der Name des Sammlers ist nicht selten eine kaum oder nicht sicher lesbare, oft noch verschnörkelte Unterschrift. In Fig. 1 ist der Name des Sammlers F. MELLING wiedergegeben, der nach HAYEK, Mitt. naturw. Ver. Steiermark **48**: 292 „besonders in Neuberg und im Koralpengebiete" des Landes Steiermark gesammelt hat. ADAMOVSKY (Fig. 2) war seinerzeit ein bekannter Prager Kultivateur.

b) Der Name des Sammlers ist mehr oder weniger stark gekürzt. Fig. 3 zeigt eine Herbarzettel des Banater Werksarztes Mag. chirurg. Peter WIERZBICKY (cf. *Wierzbickia* Rchb.), Fig. 4 den Namen eines der erfolgreichsten Floristen des weltbekannten Benediktinerstiftes Admont, Moritz v. ANGELIS, Fig. 5 den Namenszug von F. C. H. SCHOENHEIT und Fig. 6 von G. DE NOTARIS. Aber Fig. 7 (= CORDA), Fig. 8 (= SAUTER) oder die Buchstaben P A K *) (= P. A. KESSELMEYER) sind vielleicht auch manchem Fachmann zunächst wohl signa inextricabilia!

c) Das berüchtigte, heute fast ausgestorbene, zum Teil auf einem Übermasz von Stolz, von Bequemlichkeit oder von Bescheidenheit beruhende „IPSE" ist manchmal durch die Kopfleiste der Etikette aufzuklären. Sonst ist man auf jene Schriftenkenntnis angewiesen, die erst in langjähriger Übung erworben werden kann, wenn man sich nicht auf die Erfahrungen schriftenkundiger Kollegen stützen darf. Fehlende Sammlernamen können unter ganz bestimmten, sorgfältig zu erwägenden Voraussetzungen auf den Schreiber der scheda selbst bezogen werden. Dies gilt in sehr vielen Fällen z.B. für die unverkennbare, derbe Handschrift HOPPES (Fig. 9). Dagegen ist NEES v. ESENBECK mit seiner zarten, drucklosen Schrift (Fig. 10) sehr oft nur der Autor der Pflanzennamen der von ihm geschriebenen Etiketten.

d) Mangelhafte Schriftdeutlichkeit oder ungewohnte, altertümliche Schriften können zu

*) Verf. verdankt die Aufklärung dieser sonderbaren Kürzung der Liebenswürdigkeit seines kenntnisreichen Kollegen A. BECHERER (Genf).



FIGURENERKLÄRUNG

Fig. 1. *Saxifragia stellaris;* Koralpe [Ostalpen, Lavanttaler Alpen]; F[ranz] MELLING. — Fig. 2. *Thymus vulgaris* fol. variegatis; C[ultus]; 1828; ADAMOVSKÝ. — Fig. 3. *Crataegus monogyna* L. v[ar]. *parvifolia* mihi!; In Holzschlägen bei Csiklova [Banat, jetzt Rumänien]; 1843; WIERZBICKY. — Fig. 4. *Scheuchzeria palustris* L.; Admont [Ostalpen, Ennstaler Alpen]; Mor[itz. v.] ANGELIS. — Fig. 5. Friedrich Christian Heinrich SCHOENHEIT. — Fig. 6. Giuseppe DE NOTARIS. — Fig. 7. August Karl Joseph CORDA. — Fig. 8. Anton Eleutherius SAUTER. — Fig. 9. In fossis Ratisbonae [Regensburg] [Hoppe]. — Fig. 10. *Barleria Richardiana* N[EES] ab E[SENBECK]. — Fig. 11. Beispiel einer Karteikarte aus dem Clavis Nominum.

Alle Figuren dem Maszstab entsprechend verkleinert.

erschreckenden Ergebnissen führen, falls Vergleichsmöglichkeiten fehlen. So liest man in einer modernen (1946) Monographie z.B. „pr. Schladeneg, 1902 HAZEL. G. Macktes am Hochswate . . ." statt des richtigen Wortlautes „pr. Schladming, 1902 HACKEL. G'hacktes am Hochswab . . ."! Ebenfalls ohne Quellenangabe sei nur noch erwähnt, dass „Loibl" (ein bekannter Pass in den Südostalpen) schon für den Namen eines Sammlers gehalten worden ist. Dergleichen Irrtümer können sich auf Verbreitungskarten und daraus entwickelte Schlussfolgerungen in der unangenehmsten Weise auswirken.

Den geschilderten Übelständen liesse sich aber abhelfen. Auf Einladung des Chief Editors von Taxon, Kollegen J. LANJOUW, sei hier ein Hilfsmittel besprochen, das für den internen Institutsgebrauch in verschiedener Form schon mehrfach besteht, aber sicherlich in grösserem Umfange der Allgemeinheit nützlich gemacht werden sollte. Es gibt nämlich in einigen Sammlungen unter Bezeichnungen wie „Autoren-Album" o.dgl. Zusammenstellungen von Herbarzetteln, die alphabetisch geordnet sind und neben dem Originalzettel oder dessen Reproduktion wichtige nähere Angaben über den Sammler enthalten. Man könnte es als hervorragende Aufgabe der IAPT ansehen, diese vereinzelten Bausteine zu sammeln und unter modernen Gesichtspunkten zu verarbeiten. Nicht nur die blosse *Sammlung* der Schriftproben sollte das Ziel dieses Unternehmens sein, obwohl damit allein schon eine sehr wichtige, dringend gebrauchte Ergänzung des Index Collectorum geschaffen wäre. Auch eine *Aufschlüsselung* im Sinne eines *„Clavis Collectorum"* oder *„Clavis Nominum"* wäre anzustreben. Dadurch soll eine rasche „Bestimmung" einer unbekannten Handschrift bezw. Herbaretikette ermöglicht werden.

Es mag verschiedene Wege zu diesem Ziele geben. Hier sei wegen der vielen möglichen Einwände nur einer skizziert, um zunächst das Echo der Fachgenossen zu erbitten.

Die einzelnen Schriftproben werden auf Karteizetteln aufgenommen. Man bezieht in der Regel *drei* Gleichstücke jedes Karteizettels und ordnet: (a) nach der fortlaufenden Ausgabenummer (zur Kontrolle der Vollständigkeit z.B. oder zur blossen Schulung in Schriftenkenntnis); (b) nach dem ABC der Sammler-Hauptnamen, wobei Anonyma wie „ipse" unter i, „unio itineraria" unter „u" vereinigt werden, jedoch mit Hinweiszetteln, soweit Aufklärung möglich war; (c) nach *besonderen* Grundsätzen, wie Schriftduktus (reflexus, erectus, procumbens; interruptus, continuus etc.), Endschnörkel, Namengrösse oder -länge, Tintenfarbe, Etikettenform und -farbe usw. So entsteht in der (c)-Kartei ein gewissermassen beweglicher Bestimmungsschlüssel, der je nach Bedarf durch Einschaltung weiterer auffälliger „künstlicher" Merkmale erweitert, bezw. ergänzt werden kann. Das Gruppieren sollen Leitkarten mit aufgedruckten Gruppenmerkmalen erleichtern. Sobald nach mehreren Hundert Karten eine Umstellung oder Ergänzung der Schlüsselmerkmale notwendig wird, erscheint eine neue Auflage von Leitkarten (in anderer Farbe). Für die Gruppenmerkmale dieses Clavis artificialis möchte ich die *lateinische* Sprache empfehlen. So wäre z.B. der Sammlername der Fig. 1 sehr rasch zu finden: In der Kartei (b) hätte man ihn nicht sofort entdeckt, weil man wahrscheinlich unter F als erstem leserlichen Buchstaben gesucht hätte, die Karteikarte aber unter M als dem Anfangsbuchstaben des Sammler-Hauptnamens eingereiht ist. In der Kartei (c) sucht man in der Gruppe „litterae stricte erectae" und findet, da diese künstliche Gruppe in sich nach dem *ersten ungefähr leserlichen* Wortbuchstaben zu ordnen wäre, ohne viel Zeitverlust die richtige Karte. Die zahlreichen, nur aus Einzelbuchstaben bestehenden Abkürzungen, wozu auch das oben erwähnte P A K gehört, fänden unter „litterae solitariae" ihren Platz. Wie schon aus den Beispielen Fig. 9 und 10 hervorgeht, sind es nicht ausschliesslich Sammlernamen, sondern ebenso auch Autorennamen, die in dieser Kartei erfasst werden könnten. Deshalb wurde auch die Bezeichnung „Clavis Nominum" gegenüber „Clavis Collectorum" vorgezogen.

Sehr wesentlich ist die Fassung des *Karteizettels*, wofür ein einfaches Beispiel in Fig. 11 gegeben ist. (Es handelt sich hier um eine der reichhaltigsten Sammlungen ausgezeichnet präparierter Herbarbelege aus dem ostadriatischen Küstengebiet). Als *Format* dürfte das handliche internationale Postkartenformat genügen, das als DIN A 6 bekannt ist. Es reicht aus, um die meisten üblichen Herbaretiketten 1/1 wiederzugeben. Für Ausnahmsfälle wäre eine verkleinerte Etikettenreproduktion (etwa 1/2, wie in Fig. 11) durchaus statthaft, falls man nicht das einfach zu faltende, nächst grössere Format DIN A 5 vorziehen wollte.

Die *Kopfleiste* oder Ordnungszeile erhält links die fortlaufende Ausgabeziffer, hierauf den (oder die) vollständigen Namen der Sammler oder Autoren, deren Handschrift in der

scheda dargestellt ist. Auch die Angabe des * und des†-Jahres wäre sehr willkommen, da dies allein schon für manche Handschrift die Bestimmung sichert oder ausschliesst. Reicht der Raum einer Karteikarte für die weiteren Angaben nicht aus, so wird in der rechten unteren Ecke (oder auch am rechten Ende der Kopfleiste) durch „cf. ...'" „cf. ...''" usw. auf die unter der gleichen Ziffer, z.B. 184′ 184″ folgenden Karten verwiesen. Eine notwendig gewordene Ergänzung einer beliebigen Karteikarte ist also sehr leicht möglich und kann nicht übersehen werden.

Daran schliesst sich die Wiedergabe einer möglichst dem charakteristischen Bilde nahe kommenden *Etikette* in natürlicher Grösse (1/1). In Fig. 11 ist der Ausnahmsfall einer sehr grossen, daher auf die Hälfte (1/2) verkleinerten Etikette gewählt worden. Der Raum *neben* der Etikette stünde zur Verfügung z.B. für Variationen der Unterschrift (Jugend-, Altersschrift) oder für Angaben über Besonderheiten der Tinten- onder Etikettenfarbe, oder für Hinweise auf andere Etiketten, die mit der vorliegenden in Zusammenhang stehen oder verwechselt werden könnten.

Text: Der Wortlaut der Etikette ist unbedingt buchstabengetreu, Erklärungen oder Ergänzungen stets zwischen [ ], zu wiederholen; dies ist besonders wichtig!! Denn viele Eigentümlichkeiten von Handschriften lassen sich erst auf diese Weise erkennen und für die Deutung anderer schedae desselben Sammlers oder Autors verwenden. Man vgl. z.B. das altertümliche A des Namens Angelis mit dem sonst kaum lesbaren A von Admont (Fig. 4) — oder die Erklärungen zu den Fig. 3 und 4 mit den zwischen [ ] stehenden geographischen Hinweisen.

Auch die vielen im Schrifttum bereits vorhandenen Wiedergaben von Etiketten mit Namenszügen könnten verwertet werden. Dafür seien als Beispiele aus jüngster Zeit die Reproduktionen von Handschriften in Medd. Göteb. Bot. Trädg. **18**: 16 (1950) oder die in 4/5 Grösse wiedergegebenen 70 Handschriften in der Flora Malesiana **1** (1): CXLVIII-CLII (1950) erwähnt. Man würde auch hier die vollständige Wiederholung des genauen Wortlautes [mit Ergänzungen!] ohneweiteres als bedeutende Arbeitshilfe anerkennen.

Der nächstwichtige Teil der Karteikarte bringt unter *„Biogr."* die unentbehrlichen Verweise auf Biographien, Nekrologe, Itinerare und Ähnliches. Kurzzitate des Publikationsortes — unter Umständen nur knappe Hinweise auf Quellensammlungen wie LAS., PRITZ., URB., Fl. Mal. usw. — genügen als Anhaltspunkte. Hierher gehören vor allem auch Hinweise auf Karten mit eingezeichneten Reiselinien oder auf dazugehörige Register geographischer Namen. So wird jeder Benützer es sehr begrüssen, wenn er auf den Karteizetteln von A. Regel, O. Fedtschenko, Kaulbars, Kuropatkin, Osten-Sacken, Przewalski und Sewerzow die Angabe „Acta Horti petrop. **7** (2): Itinera et index!" findet und so in der Lage ist, eine Karte mit genauen Reiserouten dieser Sammler und einen „Index locorum natalium" vergleichen zu können.

Die unter *„Coll."* fallenden Daten werden in vielen Fällen im Index Herbariorum (Ind.) zusammengefasst sein, der wohl an erster Stelle unter Seitenangabe zu nennen sein wird. Sonst wäre das die Hauptsammlung besitzende Herbar anzuführen. Sehr aufschluszreich sind besonders für Namen bis zum 19. Jahrhundert die genauen Ermittlungen in De Candolle's Phytographie (1880); sie wären nach Überprüfung (!) ebenfalls hier aufzunehmen und könnten durch noch unveröffentlichte Daten ergänzt werden. So befinden sich wesentliche Teile des Herbars Nees v. Esenbeck's nach De Candolle: 436 „chez M. le baron Zschock en Autriche". Sie galten nach dessen Tode als verschollen, sind jedoch *(Acanthaceae, Bombacaceae, Buettneriaceae, Lauraceae, Piperaceae, Solanaceae)* schliesslich in das GZU gelangt; cf. Ind. Herb. **1**: 37! — Der Forscher, der sich mit Hoppeschen Belegen befasst, die in vielen Museen vertreten sind, sollte aus dem Karteizettel etwas über das Schicksal des Originalherbariums dieses eigenartigen Botanikers erfahren. Hoppe besass nach seinen eigenen Aufzeichnungen nämlich auch ein Herbarium — horribile dictu! — „optissimum"! Das Herbar wurde von Hoppe's Tochter an den österreichischen Kronprinzen Rudolf 1871 verkauft, der es dem Gymnasium in Salzburg schenkte; cf. Progr. Gymn. Salzburg **22**: 65 et 25—52, wo ein 4884 Nummern enthaltender „Katalog des Hoppe'schen Herbarium" veröffentlicht ist. 1919 sah Fritsch gelegentlich seines Aufenthaltes in Salzburg, dass Schulkinder Papierdrachen aus Blättern verfertigten, die Hoppesche Originale enthielten; er rettete die Reste (40 Faszikel) durch Ankauf für das GZU. — Für viele Sammler- und Autorennamen wird die unvergleichliche, vorbildliche Cyclopaedia of collectors der Flora Malesiana

eine Quelle ersten Ranges sein, die sowohl zu Biogr. wie zu Coll. zu zitieren wäre. Wahrscheinlich werden auch die von der Chronica Botanica geplanten Unternehmen wie der Index Botanicorum oder das im Rahmen der „Biologia" vorgesehene „Museum Schedologicum" für den Clavis auszuwerten sein.

Die Frage, ob auf diesen Karteikarten noch weitere Hinweise, z.B. auf Publikationen des Sammlers oder Autors Platz zu finden hätten, lasse ich offen. Meist sind bibliographische Notizen ohnehin in den Biographien zu finden. Solche Angaben könnten auch, falls sie Vollständigkeit anstreben, die Kartei zu unhandlich machen und würden zum Teil vielleicht dem eigentlichen Zweck, eine Bestimmungshilfe für Handschriften zu sein, nicht nützen. Ja, sie könnten sogar wegen der zeitraubenden Zusammenstellungsarbeit manchen Mitarbeiter abschrecken.

Die *Durchführung* des Unternehmens müsste wohl an eine Zentralstelle gebunden sein, wie sie in der IAPT gegeben ist. Doch wäre die Mitarbeit aller Besitzer von Sammlungen unentbehrlich. Gerade dadurch wären nämlich viele wertvolle, noch kaum bekannte Beiträge zu gewinnen. Ich denke nicht an neue „Fragebogen"; man hat wenig Lust und noch weniger Zeit, sie auszufüllen! Aber es könnte in Taxon ein Platz für den Clavis nominum eingeräumt werden, wo unter „Schedae mox emittendae" *nur die Namen* aufgezählt werden, die demnächst in Karteizetteln bearbeitet werden sollen. Jeder Empfänger von Taxon wird dadurch eingeladen, eine Postkarte für jeden ihm bekannten Namen zu opfern, falls wichtige Daten vielleicht gerade ihm geläufig sind — nur Postkarten oder auf Postkartengrösse faltbare Briefeinlagen! Dann ist auch die Ordnung und Sichtung der Einläufe in der Zentralstelle sehr erleichtert.

Die *Herausgabe* dieses Clavis könnte zwar in Form fertiger Karteiblätter folgen. Das wäre ziemlich kostspielig; auch Schuster's Icon. Botan. Index ist an dieser Klippe gescheitert. Wenn aber die schedae zu zweit je Seite, Rückseite leer, auf das dünne, auch für Reproduktionen bestens geeignete Papier von Taxon gedruckt würden, wäre dieses Hindernis beseitigt. Herstellungs- und Versandkosten könnten dadurch gesenkt werden. Jeder Bezieher hätte dann die Wahl, die einzelne scheda auf ein Karteiblatt zu kleben oder eine Garnitur des Clavis unaufgeklebt in einen Schnellhefter zu klemmen; das Format von Taxon erlaubte es, links einen Heftrand freizulassen. Falls der Clavis als Beilage zu Taxon erschiene, wäre dies der IAPT nur förderlich.

Es gibt viele Botaniker, die immer wieder über Kürzungen von Namen wie Ppptz., M.H., P. und dergleichen stolpern, andere, die rasche eine Übersicht über die Unio itineraria oder die komplizierten Sieberschen Exsikkatenwerke zur Hand haben wollen, wieder andere, die bei der Aufklärung von Typen sich nicht stundenlang um den richtigen Wortlaut eines Herbarzettels bemühen wollen. Allen diesen und vor allem dem Nachwuchs, der in unserer raschlebigen Epoche nicht mehr eine jahrelange „Lehrzeit in Schriftenkunde" auf sich nehmen kann, wird ein solcher *Clavis Nominum* nicht auf den Regalen verstauben, sondern ein gerne und oft benutzter Ratgeber sein.

Statistical Methods in Plant Taxonomy (contd.*)

by

J. Heslop Harrison (London).

Comparison of populations

For each selected character — dimension, angle, index, etc. — the taxonomically most useful statistics to be derived from the random sample are the mean and standard deviation. While these statistics are always valid as descriptions of the sample, their reliability as estimates of the parameters of the population depends on the size of the sample and the inherent variability of the population. Since statistics calculated from a succession of samples of the same population in which the distribution of individuals conforms more or less to the normal are likely themselves to be normally distributed, the reliability of an individual estimate of a parameter can be assessed by calculating its standard deviation (termed in

* Part 1 in Taxon **1** (4): 53—59. 1952.

this connection *standard error).* All estimates of parameters have taxonomic importance as descriptions of the population, but their primary use is likely to be in two connections: in the placing of individuals of unknown affinity, and in comparison with other populations.

Let us first consider these processes in relation to single-character differences. With a knowledge of the mean expression of a given character in a population and of its variability, it is possible to compute the chances of any individual belonging to the same or a similar population on the basis of its expression of that character. The procedure is simply to compute the normal deviate, i.e. the deviation of the individual from the population mean divided by the standard deviation, and enter a table of the normal deviate to determine the probability of obtaining an individual difference equal to or greater than this from a population with these parameters by chance alone. It is important to note the nature of the taxonomic conclusions which a test such as this allows one to draw. The negative aspect is clearly the most significant: a low enough probability intimates that it would be advisable to reject the hypothesis that the individual had come from such a population, and the decision here could be made on the basis of one character alone. The converse finding, that the individual *may* have come from such a population, leaves the matter more or less where it was at the beginning of the test. Reference must then be made to other characters until one is reached which provides the basis for a reasonably confident negative decision, or until all are examined, when again it would be best to state a conclusion negatively rather than positively — that there is no reason from available knowledge about the individual why it should not have come from the same population as the one from which statistical data are available, or from a similar one. There is an obvious parallel between this statistical procedure and what in effect is that of the experienced systematist faced with identifying an individual plant from a critical species complex. General impression may well provide him with a hypothesis: that the individual belongs to a taxon, A. He is then likely to examine the characters he knows to be critical in turn, seeking for a deviation which might lead him to reject this hypothesis. His test of the significance of the deviations observed is simply his experience of the variation to be expected within the taxon A. Discovery of a deviation of sufficient magnitude may cause him to reject the original hypothesis and test a second, that the individual belongs to taxon B. And the procedure may continue until he arrives at a hypothesis which he does not have to reject on the basis of any of the characters available for his study. The difference between the expert and the novice is largely that the former has the necessary mental image of the group variation to make a high percentage of correct decisions; the latter, even with access to voucher material for comparison, has not the essential knowledge of acceptable variation limits.

Whereas in orthodox taxonomic procedure these limits are conjectured from experience, the situation is different when population parameters have been estimated from mass samples since a theoretical variation range can then be computed as 3σ either side of the mean. Within this range the great bulk of the population (*c.* 99.7 %) may be expected to lie if the distribution conforms approximately to normality, and an individual falling outside can safely be regarded as not belonging to it. However, lesser deviations than this may be significant taxonomically, and the complexion of the matter is entirely changed when more than one character is taken into consideration — problems discussed further below.

Probably the most familiar of all taxonomic procedures which demand a statistical approach is the comparison of population samples. The problem may take various forms: it may be desired to compare samples from different geographical regions or from different habitats to determine whether real differences in selected characters exist or whether the colonies in the different regions or habitats from which samples are available could be regarded as belonging to the same population.

Alternatively it may be the aim to establish whether real differences in a particular character exist between two populations known to be different because of other attributes (different chromosome numbers, etc.). In each case the method is to compare the difference of the sample means with the standard error of the difference, the latter calculated in the manner appropriate to the problem and the sample size. The significance of the difference is estimated from the number of times it is found to exceed its standard error. As this ratio increases, the probability that the two compared samples

could have been drawn from the same population (or from different populations with the same mean) decreases. The level which is taken as "significant" depends on the problem in hand; a probability of 0.05 is often adopted as a conventional level of significance. Translated into the terms of the type of comparison we are considering, this would mean setting a degree of difference such that if the hypothesis that the two samples came from the same population were correct, this difference would only be exceeded by chance once in twenty trials in which a pair of unbiassed samples were compared, and thus the hypothesis itself rejected only once in this number of trials. Whether this level is acceptable when dealing with problems of taxonomy is open to question. Taxonomy is, or should be, inclined to conservatism: acceptance of similarity of two groups rarely leads to errors which cannot readily be rectified, whereas rejection of their identity on insufficient grounds can lead to classificatory and nomenclatural repercussions which may be propagated indefinitely. There is thus a strong case in dealing with single-character differences for setting a higher level of significance.

These considerations emphasise an important feature of all tests of significance and similar statistical procedures in taxonomic work: that they can never provide any automatic decisions about issues which are basically biological, but that their rôle is to provide an objective assessment of the value of the evidence upon which such decisions can be made. The point is readily illustrated by what one might expect to find in applying tests to differentiate samples of a species drawn from colonies growing in different habitats. Fully "significant" differences, statistically speaking, would probably be encountered in numerous characters; to the interpretation of such differences, statistical technique can offer nothing apart from the single (but, of course, basic) contribution, namely an objective measure of their magnitude. Whether the colonies thus objectively discriminated are to be given any form of taxonomic recognition or simply to be embraced within a single unit is a matter for non-mathematical judgment.

Apart from comparing the means of populations, it is frequently desirable to compare their variabilities. Differences in the latter may arise from differences in habitat diversity or in biotype richness, which may itself be due to a variety of causes. When the mean expression of a character is not sensibly different in the two populations which are being compared, the standard deviations provide a measure of variability in each which can be contrasted immediately. Where the means differ appreciably, such a comparison is naturally not justifiable. In this event it has been customary to make use of the coefficient of variation, the standard deviation expressed as a percentage of the mean, for the purposes of comparison. This usage has been criticised in recent years on a variety of grounds: the most important appears to be that it makes an assumption about the nature of biological variation, namely that other things being equal the standard deviation varies in proportion to the mean. This is an assumption similar to that often made about ratios of morphological dimensions, which, likewise, can only be checked with knowledge of regression relationships. The appropriate statistical procedure to eliminate this assumption — derivation of corrected standard deviations after analysis of the covariance of means and standard deviations — has been indicated by Fisher (1937) and applied by Gregor and Lang (1950) to tracing differences in variability between colonies of *Plantago maritima* from different geographical regions and ecological habitats.

Notwithstanding its limitations, the coefficient of variation can be employed to give a general indication of relative variability of a particular character in comparable samples. Many dangers lie in comparisons of variability by this or other means between different or non-homologous organs, or between dimensions and attributes such as colour, pubescence etc., for the simple reason that no absolute standards of biological variability can be established. The question, "When is a dimension of an organ equally as variable as its colour?", certainly has no simple answer, if it has any at all. There may, however, be a certain pragmatic advantage in knowing that in relation to their mean expressions, two characters of individuals of a given population vary to different extents.

Character correlation

A feature of natural variation which can never be fully appreciated from examination of small numbers of individuals is the existence of systems of correlation between various characters, both amongst individuals in natural populations, and, within a species, amongst

the various populations which compose it. Such correlations are often found to be characteristic both in their intensity and form, and must be regarded as just as much a property of the species as any morphological or physiological feature.

A variety of statistical techniques is available for specification and analysis of character correlation. In the cases of attributes one or both of which cannot be expressed quantitatively, association can be tested by entering the data in a contingency table and using the χ^2 test for randomness of the distribution. Where association between two quantitatively varying characters is suspected, a scatter diagram or correlation table usually suffices to reveal it clearly, and computation of the correlation coefficient serves to give it a numerical specification from which its significance can be tested and comparisons with other character correlations made. The exact nature of the relationship is best investigated by calculating regressions from the data, when the actual meaning of ratios derived from the dimensions or other properties becomes clarified, and the construction of indices facilitated.

The biological meaning of correlation properties is not always immediately evident, and for this reason it is often a dubious practice to assume that correlations established within particular populations of a taxon necessarily hold between those populations. Presumably the simplest type of correlation to be expected within a gamodeme is that which would arise were two characters governed in development by the same or cognate physiological systems. Linear dimensions of organs often reflect growth rates, which may in turn be controlled by hormonal systems which are operative throughout the plant. In such cases many linear dimensions of different organs may show positive correlation where genetical variation in auxin production rates exists from plant to plant, or where a diverse environment exposes different plants to different intensities of illumination. Many such environmental influences affecting fundamental physiological processes are likely to produce correlated character variation, and the interesting possibility arises of distinguishing which characters are responsive in such a manner by comparing the differences in character correlations found between colonies occupying homogeneous and heterogeneous habitats. In addition to the multifarious simultaneous effects which might be expected from variation in a basic physiological process, itself possibly governed by a relatively simple genetical system, correlation between the expression of diverse characters may arise from pleiotropy of genes acting later in development, as for example "shape" genes which may play related rôles in both leaf and flower development. Association of certain types of character expression may also arise from genetical linkage acting to reduce the frequency of certain gene recombinations, or from selective biotype elimination when certain gene combinations reduce viability. Such effects may be discernible directly, but their presence may be masked by the operation of a master variable, such as overall plant size. The technique of partial correlation is available to meet this situation, and by its use the effect of the master variable can be eliminated, and the strength of the residual association exposed.

Discrimination and Discriminant Functions

Orthodox classificatory procedures at all levels depend upon the recognition of character combinations, and the most satisfactory are those which take into account the largest number derived from the widest range of structures. But all cannot be expected to have equal systemic value, and the criteria by which they are assessed differ widely at various levels in the hierarchy. Whereas in delineating the higher ranks, familial and generic, the classificatory value of characters is judged on other and more subtle grounds than simply the magnitude of observable differences since attention is paid to their real or presumed phylogenetic significance, at species level the most useful characters tend to be those which show the greatest consistent discontinuities, and this is of course also true of critical species complexes where intergrading variation tends to obscure what differences are present. Here the differences between means must be considered in relation to the internal variation of the species — in the language of statistics, the best characters are those which show the greatest inter-specific/intra-specific variance ratio. Evidently in attempting to separate and define the taxa in critical complexes the most successful procedure will be one which takes into consideration the maximum available number of characters in which differences are apparent, but which attaches significance to those characters according to their individual value in providing the required discriminations. Indices combining observations on several

characters which are devised for the purpose of separating two overlapping groups are usually known as discriminant functions.

Such functions (varying in degree of complexity) have long been employed in anthropological research in separating human races on the basis of skeletal measurements, and the general method may prove to have wide application in plant taxonomy. The basic postulate is simply that two populations may show intergradation in every character considered separately, but that complete discrimination of the two (including the potentiality of referring correctly any small sample or even individual to one or the other) should be possible if a combination of enough reasonably independent measurements can be taken into account. It is obvious that multiplying the number of characters comprehended will not proportionately improve the efficiency of the discriminant function if thereby some which are associated are incorporated, since two characters showing close correlation can provide little more information about the affinities of an individual plant than one taken alone. Hence the necessity for selecting features which do not show correlated variation in the populations which it is sought to separate, which will usually mean reference to as wide a range of different organs or structures as possible for those to be combined in the discriminant function.

An important advantage of discriminant functions lies in the potentiality of their application to individuals. While the functions themselves are primarily "population" concepts, and their derivation demands knowledge of the bulk varation of the two groups involved, an important property of them in use is that they can be made sensitive enough to place single plants accurately in relation to the average of these groups, and this on the basis not of one but of a galaxy of characters. Since a discriminant function can be adapted to integrate effectively the available knowledge about the phenotype of a given plant of hybrid origin in relation to pure populations of the parents, the principle can be applied to the analysis of hybrid swarms and similar phenomena. It is worthy of note that ANDERSON's "hybrid index" (used first in the study of hybridisation in *Tradescantia*, ANDERSON, 1936) was a form of discriminant function, albeit a somewhat subjective one, computed for each plant as an aggregate of scores awarded to individual characters, some of which were assessed quantitatively and others in a broad qualitative manner, based upon the differences apparent between the parents of the population of putative hybrids under analysis. The same author's "plant index", employed to discriminate two species of *Uvularia* (ANDERSON AND WHITAKER, 1934), was a similar but more elaborate function based upon measurable or countable characters, observations on which were combined quadratically. Neither of these indices took account of intra-group variation, except in so far as subjective loading of the character scores was practised in compounding the hybrid index, and from this point of view they were less efficient that they might have been, although no doubt discharging perfectly well their purposes.

The complete mathematical solution of the problem of deriving the most efficient function for the discrimination of two groups using several metrical characters has been provided by FISHER (1936). The mathematical procedure is somewhat complex and the method does not appear to have been widely applied to problems of botanical taxonomy. A simplification has been suggested by PENROSE (1947) which may find wider application. PENROSE's method involves the calculation of a "shape" and a "size" index which can be combined to provide the optimum discrimination. Where there is little correlation between the measurements employed, the "shape" index itself may be adapted for certain botanical problems; it is derived by combining linearly the measurements available from the various characters, each expressed in terms of the standard deviation obtained from pooling the variances of the separate groups, and each loaded by a factor calculated with reference to the magnitude of the difference between the group means for the particular measurement. Reducing the loading factors to round figures does not detract great from the efficiency of the function, and may lead to considerable economy in arithmetic.

* * *

The foregoing survey of techniques, brief although it is, may have served to indicate some of the potential value of the statistical approach to taxonomic problems. Statistics is the mathematics of variation, primary aims of which are to reduce unco-ordinated masses of data derived from individual observations to easily comphrehended terms, and to attribute

to those terms their correct value so that they can, if necessary, be made the basis for non-mathematical action. Taxonomy is a science of variation, concerned with bring order and system to the assemblage of living organisms. This it does by grouping, naming and classifying in accordance with a body of principles, the majority of which are widely accepted and readily applied but some of which are controversial in their interpretation. Often this results from imperfection of methodology rather than conflict of aims. Just as the debate concerning the place of phylogeny in classification could presumably be finally closed by the revelation of an adequate number of fossil lineages, so one might imagine that the many differences of opinion as to what shall constitute species would be brought nearer reconciliation by an objective enough exposition of the natural populations of which they are built. Most systematists today would agree that they set out to describe and define populations rather than individuals; that they so often do not actually do so in practice is partly due to a failure to adopt methods necessary to acquire a knowledge of the structure of populations, and partly that even if they do themselves acquire such knowledge by years of laborious observation, they have no means of presenting it concisely in a form immediately interpretable by others. Much can be done to meet both shortcomings through the adoption of rational methods of population sampling, and of the elementary statistical techniques necessary to make from these the appropriate deductions.

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Committee to deal with Urgent Nomenclatural Needs

Memorandum by British Members

1. We, the undersigned British members of the above Committee, are of the unanimous opinion that, in the interests both of nomenclatural stability and of the continuance of friendly co-operation between taxonomists and other users of the scientific names of plants, it is highly desirable that some alteration in the existing Rules should be made whereby changes in widely used specific names of economic plants, at present rendered necessary by the application of the Rules, may be reduced to a minimum in the future.

2. We are unanimously opposed to the introduction of *nomina specifica conservanda*, for the following reasons:

A. The establishment of a list of *nomina specifica conservanda* would open the door to a flood of names proposed merely because they were the names best known to their proposers. Most of those who have advocated the establishment of such a list have stated that it could be confined to 100 or not more than 200 names. We believe that such limitation would be impracticable.

B. The listing of particular names as con-

served for particular species would entail the determination and designation of their types, and also the precise delimitation of the species concerned. This would be a long and difficult task which would complicate and prolong indefinitely the work of compiling a list of *nomina specifica conservanda*. Further, it is possible that subsequent work on particular species after the list had been published would necessitate alterations of the names in the list, thus increasing instead of reducing undesirable name changes. It is significant that, among the lists proposed to the Cambridge Congress by various botanists (BRIQUET, Rec. Syn. 133-8) were two new combinations (one of which violated Art. 58 of the Rules).

3. We are unanimously of the opinion that the adoption of the principle of *nomina specifica rejicienda* is the most satisfactory means of bringing about the desired reduction in name-changes, and that a sound and practicable method can be devised for incorporating this principle in the Rules.

4. We desire to make it clear that the principle of *nomina specifica rejicienda* must not be applied retro-actively; changes already made in the nomenclature of species in accordance with the Rules, and generally accepted by taxonomists who obey the Rules, must not be reversed. The object of the proposed list of rejected names is solely to prevent highly undesirable changes in the future.

5. We are of the opinion that the existing provisions for rejecting specific epithets should be incorporated with the above principles in a single new article to follow the present Art. 68 and to replace Arts. 62-65, and that a single list of specific names rejected for whatever reason should form an Appendix to the Rules.

6. The following is a suggested draft of such a new article:

NEW ARTICLE

(to follow old Art. 68 and to replace old Arts. 62-65).

A name of a species must be rejected if it is included in the list of *nomina specifica rejicienda* (Appendix ..). Names in this list are treated as illegitimate.

The object of the list of *nomina specifica rejicienda* is to further the attainment of stability and unambiguity in the nomenclature of *well-known species, especially familiar species of wide distribution and species of special horticultural, economic or other importance*. The list comprises names which, if not rejected in this way, would by the provisions of these Rules invalidate widely accepted names well established in botanical litterature or in commerce, or would prove to be permanent sources of confusion or error. To be eligible for inclusion in the list a name must belong to one or more of the following five categories:

(1) An overlooked or little-used name which is an earlier synonym of an established name and would invalidate that name. Example: *Lassonia heptapeta* Buc'hoz (Pl. Nouvellem. Découv. 21, t. 19 fig. 1: 1799), which would invalidate *Magnolia denudata* Desr. (apud Lam. in Encycl. Meth., Bot. III. 675: 1791).

(2) A much-used name which, owing to its use in different meanings, has become a permanent source of confusion or error *(nomen ambiguum)*. Examples: *Rosa villosa* L. (Sp. Pl. I. 491: 1753), which has been applied to several different species and so become a source of confusion; *Lavandula spica* L. (Sp. Pl. II. 572: 1753), under which Linnaeus included the two species subsequently known as *L. officinalis* Chaix and *L. latifolia* Vill., and which has been applied almost equally to both of them.

(3) A name (in current use for a well-known species) which, on examination or re-examination of its type, is found to be applicable to another species and would become the correct name for that species *(nomen ambiguum incipiens)*. Example: *Myosotis collina* Hoffm. (Deutsch. Fl. 1791. 61: 1791) has long been the established name for a well-known species of *Myosotis*, but its type is found to be referable to another species, *M. discolor* Pers. (1797), so that the name *M. collina* Hoffm. would have to be transferred from one well-known species (now called *M. hispida* Schlecht.) to another (*M. discolor* Pers.).

(4) A name of which the original definition was based on two or more entirely discordant elements and which would be a permanent source of confusion *(nomen confusum)*. Examples: *Illicium san-ki* Perrott. (in Mem. Soc. Linn. Par. III. 121: 1825), which was based on fruits of *Illicium verum* Hook. f. (1888) and leaves belonging to a very different family (probably *Clausena* in Rutaceae), so that the use of the name *I. san-ki* in place of

I. verum could only cause confusion; *Plectronia ventosa* L. (Syst. Nat. ed. 12, II. 183 et Mant. Pl. 52: 1767), based on a confusion of material of *Olinia cymosa* (L.f. 1781) Thunb. with an illustration of *Canthium* (Rubiaceae), so that the use of the epithet *ventosa* for *O. cymosa* would cause confusion, the name *Plectronia ventosa* having also been much used for the species of *Canthium.*

(5) A name based on a monstrosity which would invalidate a name based on a normal (non-monstrous) plant. Example: *Ornithogalum fragiferum* Vill. (Hist. Pl. Dauph. II. 270: 1787), based on a monstrosity, which would invalidate the name *Gagea liotardi* (Sternb.) J. A. & J. H. Schult. = *Ornithogalum liotardi* Sternb. (1818).

Before a name can be included in the list of *nomina specifica rejicienda* it must be recommended for such inclusion by the Special Committee for the group concerned, whose decision is subject to confirmation by the Advisory Board and to ratification by the next ensuing International Botanical Congress. The submission of a name for consideration by the Special Committee must be accompanied by a full statement of the case for its rejection.

Note 1. This Article must not be applied retroactively. Names recently brought into use which have become established in botanical literature (e.g. *Bromelia comosa* L., the basis of *Ananas comosus* (L.) Merr. replacing *A. sativus* Lindl.) are not eligible for rejection.

Note 2. *Nomina specifica rejicienda,* when cited as synonyms, should be followed by the explanatory words *„nomen rejiciendum"* or *„nom. rejic.".*

Note 3. If a *nomen specificum rejiciendum* is an earlier homonym it retains its status as such.

Note 4. When the placing of a name on the list of *nomina specifica rejicienda* has been recommended by the Special Committee and confirmed by the Advisory Board, the name may be rejected pending decision by the next ensuing Congress.

J. E. Dandy — T. A. Sprague
J. S. L. Gilmour — E. M. Wakefield

Special Committee for Hepaticae

Secretary: Dr Margaret Fulford, Department of Botany, Biology Building, University of Cincinnati, Cincinnati 21, Ohio, U.S.A.

The Special Committee has adopted (by favorable vote) the following Nomina Conservanda:

NOMINA CONSERVANDA	NOMINA REJICIENDA
Adelanthus Mitt.	*Adelanthus* Endl. *Adelocolea* Mitt.
Androcryphia Nees	*Noteroclada* Tayl.
Diplophyllum Dumort.	*Diplophyllum* Lehm. *Diplophylleia* Trev.
Gymnomitrion Corda	*Cesius* S. F. Gray
Plagiochasma Lehm. & Lindenb.	*Aytonia* Forst & Forst *Aitonia* Thunb. *Rupinia* L.f.
Radula Dumort.	*Martinellius* S. F. Gray
Scapania Dumort.	*Martinellius* S. F. Gray
Lembidium Mitt.	*Lembidium* Koerber
Lepidozia (Dumort.) Dumort.	*Mastigophora* Nees 1833
Mastigophora Nees 1838	*Mastigophora* Nees 1833
Reboulia Raddi corr. Nees	*Strozzius* S. F. Gray *Rhakiocarpon* Corda in Opiz *Otiona* Corda in Opiz *Achiton* Corda in Opiz
Treubia Goeb.	*Treubia* Pierre ex Boerlage
Trichocolea Dumort. corr. Nees	*Thricolea* Dumort. *Tricolea* Dumort.
Bazzania S. F. Gray corr. Carringt.	*Bazzanius* S. F. Gray *Donnia* S. F. Gray *Herpetium* Nees
Herberta S. F. Gray corr. Lindb.	*Herbertus* S. F. Gray *Herbertia* S. F. Gray corr. Garringt. *Herbertia* Sweet
Marchesinia S. F. Gray corr. Carringt.	*Marchesinius* S. F. Gray *Phragmicoma* Dumort.
Mylia S. F. Gray corr. Lindb.	*Mylia* Leman *Mylius* S. F. Gray
Nardia S. F. Gray corr. Carringt.	*Nardius* S. F. Gray *Mesophylla* Dumort.

NOMINA CONSERVANDA	NOMINA REJICIENDA
Pallavicinia S. F. Gray corr. Trev.	*Pallavicinia* De Not.
	Pallavicinius S. F. Gray
	Pallavacinia S. F. Gray corr. Lindb.
	Pallavicina S. F. Gray corr. Carringt.
	Pallavicinia S. F. Gray corr. Lindb. ex Carringt.
	Herverus S. F. Gray
	Herbertus S. F. Gray
Riccardia S. F. Gray corr. Trev.	*Riccardius* S. F. Gray
	Roemeria Raddi

Special Committee for Phanerogams and Pteridophyta

Secretary: Prof. R. E. G. Pichi Sermolli, Istituto Botanico dell' Università, Via Lamarmora 4, Firenze, Italy.

In *"Taxon"* **1** (1): 10. 1951 two separate committees were listed, one for Phanerogams and one for Pteridophyta. It has become clear that this statement was erroneous: the Stockholm Assembly decided to continue the practice of having one combined committee for Phanerogams and Pteridophyta. Prof. Pichi Sermolli was appointed Secretary of this Committee. Two subcommittees were established: one for Phanerogams and one for Pteridophyta.

Special Committee for Fungi

Two names of members of this committee were left out in the list provided in Taxon **1** (1): 10. 1951. The editors of Taxon apologize for this omission; the following names should be added to the list:

Miss E. M. Wakefield (Great Britain).
Dr S. P. Wiltshire (Great Britain).

* * *

News from the Herbaria

CONGO BELGE

Exploration du Parc National de la Garamba, Uele.

Mr G. Troupin, Conservateur-adjoint du Jardin Botanique de l'Etat à Bruxelles, a quitté la Belgique le 5 février 1952 pour prendre part, durant 8 mois, à la mission d'exploration du Parc National de la Garamba, Uele, Congo Belge. Cette mission est organisée par l'Institut des Parcs Nationaux du Congo Belge, 21 rue Montoyer à Bruxelles, dans le cadre de son programme général d'explorations et d'études scientifiques des Parcs Nationaux du Congo Belge.

La mission d'exploration du Parc National de la Garamba a commencé au début de 1950, sous la direction de Monsieur H. de Saeger, Chef de mission. Elle comprend divers spécialistes et se terminera vers la fin de l'année 1952.

Elle a pour but d'établir les inventaires floristique et faunistique du Parc, en rapport avec les conditions du climat et du sol. A cet effet, elle s'efforce de réunir une importante documentation de matériaux d'étude et de photographies en noir et en couleurs. Les collections botaniques seront déposées et étudiées au Jardin Botanique de l'Etat à Bruxelles. W. Robyns.

NEPAL

The *"Times"* of 25 Febr. 1952 provides the following details on the botanical expedition which, in the course of February, has left for Western Nepal. This expedition is sponsored by the British Museum (Natural History) and the Royal Horticultural Society and is supported by other scientific bodies interested in biological exploration.

The three members of the expedition are Mr. Oleg Polunin, a science master at Charterhouse, Mr. W. R. Sykes, of the Royal Horticultural Society Gardens, Wisley, and Mr. L. H. J. Williams, of the Department of Botany, British Museum (Natural History). Mr. Polunin will return in August, but the two other members of the party will remain in Nepal for eight months, and during that time collections will be made of botanical specimens for the British Museum and of seed and bulbs of plants of potential garden value for the Royal Horticultural Society.

The area in which they are to collect lies between the Karnali River and the Dhaulagiri massif and includes a section of the main Himalayan range, with altitudes ranging from 2,000 ft. to Dhaulagiri's 26,795 ft. The party is travelling by sea to Bombay and from thence by rail to Jarwa, a railhead near the

Nepal-Indian frontier. From there they will travel northwards into Nepal by way of Bijauri, Sallyana, and Jajarkot to Jumla. The lastnamed place will be used as a base from which the expedition will split up into three to cover as much of the area as possible, northwards to the Tibetan frontier, westwards to the valley of the Karnali, and eastwards towards Dhaulagiri. This area is completely unexplored botanically, and thus it is hoped to fill a gap in the knowledge of the flora of the Himalayan range in which the British Museum has for some years been especially interested. The museum already possesses the valuable collections made by KINGDON-WARD and LUDLOW AND SHERIFF from south-east Tibet, Bhutan, and Burma, as well as recent collections made in central Nepal by members of W. H. TILMAN's expeditions in 1949 and 1950.

MALAYSIAN COLLECTING TRIPS

Mr J. S. WOMERSLEY has made a reconnaissance and collecting trip to the type locality of Forbes' New Guinea expedition in the Sogere region of Papua, June-Aug. '51.

Mr J. W. VAN BORSSUM WAALKES has made a short trip to the Krakatau Islands in the Sunda Straits.

Mr P. GROENHART is the leader of the biological group of the Moluccas Expedition which left Bogor 10 Aug. 1951 to visit Halmaheira, Ternate Batjan and Obi.

THE FLORA OF CUBA

The second volume of the *"Flora de Cuba"*, by BROTHER LEON and BROTHER ALAIN of the *"Herbario de la Salle"*, Habana, Cuba, was printed in August 1951. It follows ENGLER's system and comprises the Dicotyledons up to the *Meliaceae*. The principal families treated are: *Piperaceae, Urticaceae, Loranthaceae, Lauraceae, Leguminosae.*

The third volume is in preparation; it will probably contain the Dicotyledons from *Malpighiaceae* up to *Myrtaceae*. The *Euphorbiaceae* have already been studied by BROTHER ALAIN who, thanks to a Guggenheim Fellowship, had the opportunity to study many Cuban type specimens preserved in the herbarium of the New York Botanical Garden. Other important families to be treated in the new volume are: *Sapindaceae, Malvaceae, Flacourtiaceae, Passifloraceae, Cactaceae* and *Myrtaceae*. Specialists wanting to assist in the preparation of this volume will be welcome. They are requested to write to BROTHER ALAIN, Curator of the herbarium, asking for duplicate unmounted specimens as a gift for their own herbaria.

The "Herbario de La Salle" has recently received a grant from the Rockefeller Foundation, for purchasing Herbarium steel cases, to prevent destruction of the herbarium by insects or fire.

HERBARIUM OF PRAIRIE FLORA

"Herbarium of Prairie Flora" has been established by Augustana College in Sioux Falls, South Dakota, U.S.A. The purpose of this new Herbarium is to study the wild flora of the prairie in South Dakota, which are rapidly becoming extinct by the advancement and mechanization of agriculture. It also serves for teaching purposes. The establishment of this herbarium was sponsored by DR L. M. STAVIG, president of this college and carried out by Dr E. E. LEPPIK, professor of biology.

REVISIONS IN PREPARATION

Ranunculaceae

Dr ALICIA LOURTEIG, temporarily at the Gray Herbarium of Harvard University, Cambridge, Mass. U.S.A., is undertaking a complete revision of the South American *Ranunculaceae*. She would highly appreciate receiving material for identification and revision.

Phyllanthus

Mr GRADY L. WEBSTER, University Herbarium, University of Michigan, Ann Arbor, U.S.A., is working on a revision of the West Indian species of the genus *Phyllanthus* (Euphorbiaceae), with the exception of the sect. *Xylophylla*. He expects to finish his work within the next year, and he would be glad to receive herbarium material or living material for identification or verification.

Pittosporum

Dr G. CUFODONTIS, Botanisches Institut der Universität Wien, wird seine *"Revision der afrikanischen Pittosporum-Arten"*, welche auf Grund des gesamten vorhandenen Materials durchgeführt wurde, im Laufe dieses Jahres abschliessen. Das Manuskript, samt Karten und Abbildungen, dürfte 80-100 Seiten umfassen. Die Arbeit ist in deutscher Sprache verfasst. Es wird eine Publikationsmöglichkeit gesucht.

Orchidaceae

Dr C. A. BACKER has compiled, on the basis of a manuscript by the late Dr J. J. SMITH, a new revision of the Orchids of Java, including both the native and cultivated species. It will form part of the mimeographed Flora of Java (emergency edition). Copies for non-subscribers to this flora will be available at the Rijksherbarium, Leiden, Netherlands.

Francis Whittier Pennell †

Dr F. W. PENNELL, Curator of Plants, The Academy of Natural Sciences of Philadelphia, U.S.A., died suddenly on February 3, 1952. He was born at Wawa, near Philadelphia, August 4, 1886. He received his Doctorate from the University of Pennsylvania in 1913. Following a one-year post-doctoral fellowship at the University of Pennsylvania, he was Associate Curator at the New York Botanical Garden from 1914-'21; in 1921 he returned to Philadelphia to assume the post held until his death. Among his various honors was the presidency of the American Society of Plant Taxonomists, 1942.

Always a firm believer in the necessity of personal field study, his expeditions took him into Columbia 1917-'18, '22; Peru '25, '48; Chile '25; Mexico '34, '35, '37-'38, '40; and the summer months from 1912 onwards almost invariably saw him somewhere in the U.S.A. in the field, usually in the south-eastern mountains or the Far West.

Dr PENNELL's special interest was the *Scrophulariaceae*, and he was noted particularly for his thorough and meticulous studies of the materials of the Western Hemisphere. With plans already matured and a special grant for additional field work in the West in 1952, death overtook him in the midst of assembling the text for his long-projected, and what certainly would have been a monumental, "*Scrophulariaceae of the Western United States*".

By nature and upbringing a gentle soul, he was laid to rest in the faith of his fathers, in the simple and impressive service of the Society of Friends (Quakers), of which he was a staunch and leading member. He will be personally missed by all of those who knew him.

W. H. CAMP.

PERSONALIA

Prof. Dr h. c. CARLOS FIEBRIG died suddenly at his home in Tucuman, Argentina on 25 October 1951.

Prof. R. E. HOLTTUM was awarded the degree of D. Sc. by the University of Cambridge (Gr. Br.).

Dr W. R. PHILIPSON has accepted a lecturership in the University of Christchurch, New Zealand.

Dr H. N. RIDLEY was congratulated, 10 December 1951, by his numerous friends with his 96th birthday.

M. RENE MARIE, whose death in 1950 is still felt as a serious loss to mediterranean botany, prepared a Flora of North Africa. The manuscript of the Pteridophytes, the Gymnosperms and the Monocotyledons is finished, that of the Dicotyledons is ready up to the Leguminosae (p. p.).

Dr P. CAMPOS PORTO has been appointed Director of the Jardím Botánico do Rio de Janeiro. The composition of the higher staff of this Institute is the following:

P. CAMPOS PORTO, Director.

A. C. BRADE, Head of the Section of Systematic Botany.

F. R. MILANEZ, Head of the Section of General Botany.

C. T. RIZZINI, Head of the Section of Applied Botany.

A. P. DUARTE, Superintendent.

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Dr B. B. MUNDKUR, formerly Deputy Plant Protection Adviser, Ministry of Agriculture, Government of India was offered and has accepted the position of Professor of Botany, University of Poona, Poona 7, India. The University of Poona was established four years ago and Dr MUNDKUR is endeavouring to establish a good Department of Botany in the University. All his friends are requested to note the change of his address. All Institutes of Botany, and Departments of Botany of the various Universities in Europe, North and South America, Africa, Australia, etc., are requested to send to Dr MUNDKUR monographs, bulletins, reprints of botanical publications, specimens, etc. for the benefit of the University. Specimens, etc. from the vicinity of Poona will be sent in exchange as they become available.

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Members are urgently requested to pay their fees for the current year to the respective financial agents in the course of **May or June** 1952. Members in countries without financial agents are requested to make payable their subscriptions to *Messrs Vlaer & Kol, Utrecht, Netherlands,* crossed: *"a. c. International Bureau for Plant Taxonomy".*

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Regnum Vegetabile

Vol. II. *Index Herbariorum.* A guide to the location and contents of the World's Public Herbaria, edited by J. Lanjouw Ph. D. *Part 1. The Herbaria of the World,* by J. Lanjouw Ph. D. and F. A. Stafleu Ph. D.; XVI and 167 pages; 16 x 24 cm; 15 February 1952. Details about contents and *prices for members* are given on p. 41 of Taxon no. 3. Price for *non-members:* Dfl. 13.30. Orders can be sent to the *office* of the I.A.P.T.

Vol. III. *International Code of Botanical Nomenclature.* Ready in June 1952. Details are given in the circular letter which is enclosed in this issue of "Taxon".

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